

net, and lower it to the ground. This operation will raise up the bottom of the net, and with it the insect, which will fly up into the forceps, and these being closed at the sides, as before directed, it cannot escape. The yew-tree seems to flourish best in chalky districts. Few persons are aware of the great age and gigantic size of many of these magnificent trees in Norbury Park. They seem common in the woods and hedgerows on the chalk in Kent and Surrey. Those in Norbury Park are really a natural curiosity. I invite entomologists to examine them, more particularly, of course, when the fruit is ripe. I am convinced that they will be rewarded by new discoveries. Norbury Park is within the limits of the metropolitan district, as circumscribed by Mr. Stephens. I hope the London entomologists will be excited, by my success, to continue the investigation of this interesting *habitat*: I fear I shall never have another opportunity.

I am, Sir, yours, &c.

JOHN WALTON.

14, Canonbury Square,
February, 1834.

ART. XVIII.—*On Leucospis; a Genus of Hymenopterous Insects.* By J. O. WESTWOOD, F.L.S., &c.

As a supplement to Mr. Walker's detailed descriptions of the previously recorded species of the genus *Leucospis*, I beg leave to offer to the entomological student the following descriptions of new, and notes upon several of the old species, preceded by a few observations upon the genus in question.

As a genus, *Leucospis*^a is especially interesting; firstly, from the circumstance that it comprises the largest known species of one of the most extensive families of insects—the *Chalcididæ*; secondly, from the extraordinary position of the *ovipositor*, which, when at rest, is laid along the back of the *abdomen*. It is difficult, at first sight, to imagine how this instrument

^a I have not adopted Dumeril's derivation of this word, as the insects exhibit no character in conformity with it.

can be brought into action; when, however, we consider the extreme flexibility with which this organ in other insects is endowed, by means of the muscles attached to its base, the difficulty soon vanishes. A remarkable instance of this capability, of which I have often been witness, is recorded by Mr. Haliday, in the 98th page of the second volume of this Magazine, (No. VI.) From this account, it will moreover be seen, that the abdominal segments themselves are capable of great elongation, by means of the connecting membrane; and Jurine, who appears to have observed the motions of *Leucospis*, states, that “leur ventre jouit, dans l’articulation du premier et du second segment d’un mouvement particulier de flexion menu de demirotation.” It is, moreover, remarkable, that in the largest individuals belonging to another extensive family—the *Cynipidæ*, the females (genus *Ibalia*) carry the *ovipositor* in a similar situation,—these two genera being the only instances of so singular a peculiarity, throughout the vast order of Hymenoptera. A still further peculiarity exists also in these two genera, which has hitherto been unnoticed (at least in *Leucospis*) by entomologists; namely, the existence of a minute spiracle at the base of the fifth segment of the *abdomen*, in the females, on each side. Mr. Curtis is the only author who has noticed it in both sexes of *Ibalia*. (British Ent. Pl. 22.)

The wasp-like appearance of this genus, its *folded wings*, and elongated, cordate lower lip, establish a connexion with the *Vespidæ*, which, however, may not perhaps be deemed of a higher rank than one of mere analogical resemblance.

The character derived from the femoral teeth, as will be seen from my subsequent descriptions, can scarcely be considered sufficiently precise for the establishment of sectional divisions in the genus.

Leucospis gigas. Klug. Walk.

Varietatem *feminæ* a celeberrimo Latreille accepi, e typo specifico, (ut auctoribus predictis descripto) diversam, 1^{mo}. maculis faciei flavis per marginem totum canaliculæ frontalis, utrinque currentibus usque ad antennarum insertionem; ^b — 2^{do}. femoribus posticis internè piceo-nigris, apice flavis, externè flavis macula

^b It will be seen from Klug’s character of *L. grandis*, that in this respect this variety approaches that species.

unica magna subquadrata infera nigra : oviductus abdominis segmenti 1^{mi}. medium attingens. (Long. corp. $6\frac{3}{4}$ lin.)

Coquebert's figure of the femoral spot, exhibits its precise form as in my insect.

It appears to me, from the Fabrician character of *L. gigas*, "*aculeo longitudine abdominis*," that Klug has misapplied the specific name ; that his *L. grandis*, "*aculeo abdominis longitudine*," is the Fabrician *L. gigas*, and that consequently a different name ought to be given to his *L. gigas*.

Leucospis. Shuckardi. Mas. Nigra, collari bifasciato, scuto mesothoracico in medio maculis 2 oblongis, oviductu abdominis basin non attingente, femoribus posticis 6-dentatis. (Long. corp. $5\frac{3}{4}$ lin. ; expans. alar. $9\frac{1}{2}$ lin.)

L. gigantem coloribus mentiens, sed magnitudine minori, statura graciliori notisque aliis distincta : caput nigrum maculis 2 rotundatis inter oculos, et partem superiorem canaliculæ frontalis flavis : mandibulæ basi rufescentes : antennæ nigrae, articulo 1^{mo}. (nisi ad basin) fulvo, 2^{do}. nigro, 3^{tio}. et sequenti, etiam extremo apice rufescentibus : collare flavo-bifasciatum, fasciâ anticâ ad angulos anticos paullò dilatatâ ; mesothoracis scutum in medio, maculis 2 parvis oblongis, et ad latera utrinque vitta subcuneiformi flavis ; mesothoracis scutellum lunula lata flava ; metathoracis præscutum^c dentibus 2 parvis munitum : epimera metathoracica fere tota flava : abdomen thorace paullò longius, segmento 1^{mo}. fascia lata, 2^{do}. fascia angusta, 3^{tio}. fascia subangusta flavis, omnibus in medio interruptis duabusque anticis ad latera abbreviatis, denique lunulis 2 (fascia 3^{tia}. multo minoribus) apicalibus flavis : oviductus niger, abdominis segmenti 1^{mi}. medium attingens : coxæ anticæ et intermediæ nigrae, posticæ nigrae, angulo supero apiceque subtus (at leviter) flavo notatis : pedes 4 antiqui fulvo-flavi, femoribus basi obscurioribus ; femoribus posticis internè piceo-nigris, apice fulvis, externè flavis, macula magna rotundata infera nigra, dentibus 6 nigris munitis, 1^{mo}. brevi acuto, 2^{do}. omnium longissimo acuto, reliquis longitudine decrescentibus obtusis ; tibiis et tarsis posticis fulvis, illis linea interna nigra : alæ fuscescentes, costa saturatori.

I am indebted to W. H. Shuckard, Esq., a gentleman who has devoted much attention to the study of the

^c According to the nomenclature of the thoracic segments of Mr. MacLeay, it is the metathoracic præscutum, (post dorsolum, *K.* & *S.* or metathoracic scutum, *And.*) which is toothed.

Hymenoptera, for my example of this species, which I have inscribed with his name. He believes it to be of American origin, as it came into his possession in company with various insects from that country, including *Pelecinus polycerator*, &c. It ought to form a distinct section in the genus, from the posterior *femora* having only six teeth, although, in certain positions, a minute rudiment of a seventh tooth is just visible.

Leucospis subnotata. Fem. *Nigra, colore albido-flavescenti parce notata, femoribus posticis 9-dentatis, coxis posticis immaculatis oviductu abdominis basin superante.* (Long. corp. $4\frac{1}{4}$ lin.; expans. alar. 8 lin.)

Caput nigrum, punctatum, immaculatum, canaliculâ frontali sub-metallicâ: antennæ nigrae articulo 1^{mo}. subtus albido, 2^{di}. apice, 3, 4, et ultimo obscure rufescentibus: thorax niger, punctatus; collaris lateribus margineque postico toto, et antico abbreviato tenuiter flavidis; mesothoracis scutum lateribus flavido tenuiter vittatis, dorso immaculato; mesothoracis scutellum apice lunula angusta albida; metathoracis præsentum inerme; epimera metathoracica lineâ flavida notata: abdomen nigrum, punctatum, basi obscure rufescens, segmento 1^{mo}. versus apicem flavido—(latè et in medio interruptè)—fasciato, segmento 2^{do}. sequentibus multò angustiori ad latera lineâ tenui albida inferè notato, 3^{tio}. apice flavido fasciato, (in medio supra angustiori et interrupto) lunulisque duabus minoribus apicalibus flavidis, oviductus piceus, abdominis basin superans: coxæ omnes nigrae, posticæ 2 apice rufescentes, internè albido vix notatæ, femora 4 antica nigra, apice, albida; tibiæ anticæ nigrae lineâ superâ fulvâ, intermediæ et posticæ flavida lineâ inferâ nigrâ, femora postica nigra, apice internè fulva, externè basi et apice maculâ parvâ albidâ notata, dentibus 9 brevibus nigris, 1^{mo}. crassiori obtuso, 2^{do}. parvo; reliquorum 4 et 5 longioribus acutis; tarsi omnes fulvi: alæ fuscæ, costa saturatiori.

Habitat in America Septentrionali, apud Halifax, Novæ Scotiæ; ubi rarè occurrit. Communicavit Dom. G. B. Sowerby.

I will only add, that in a genus like the present, in which the specific characters depend upon apparently trifling distinctions, it is almost an useless waste of labour to attempt to identify the species so concisely described by the old authors.

Leucospis Hopei. Mas. *Nigra, collari unifasciato, epimeris metathoracicis nigris, antennarum apice tibiis tarsisque rufis.* (Long. corp. 5 lin.; expans. alar. $8\frac{1}{2}$ lin.)

Caput nigrum, immaculatum: antennæ rufæ, articulis 2 basalibus nigris: thorax niger, collare nigrum, margine postico flavo; mesothoracis præscutum lunulâ tenui flava; epimera metathoracica tota nigra: abdomen breve, convexum, flavo tenuè 3-fasciatum, fasciis 2, primis ad latera abbreviatis, 1^{ma}. lunulata, coxæ posticæ flavo-vittatæ: pedes nigri, femoribus apice, tibiis tarsisque rufis, femoribus posticis (uno) 10-, (altero) 11-denticulatis: alæ sub-fuscæ, costa saturatiori.

Habitat in America Meridionali, apud Valparaiso. In Mus. Domi Hope, F.L.S. Z.S. E.S. &c.

Named in honour of the gentleman in whose extensive collection it is uniquely contained.

Leucospis Spinolæ. *Nigra, margine omni collaris (vel antice abbreviato in ♂) flavo, coxis posticis flavo latè fasciatis, tibiis anticis extus nigrescentibus, intermediis flavis, scuto mesothoracico ♀ ad latera flavo-lineato.*

Leucospis intermedia. *Spinola. Ins. Lig. Fasc. 4. p. 236, No. 283. (Nec. Fonscolombii, Ann. Sc. Nat. 26. 274.)—*
(Long. corp. $3\frac{1}{4}$ lin. ♂ ; ♀ $4\frac{1}{2}$.)

Habitat in Liguriâ.

On comparing Spinola's detailed description of the species which he named *intermedia*, (and of which he had captured many specimens), with Mr. Walker's description of *L. dorsigera*, with which the latter has united it, sufficient differences^d will be found to warrant their separation; and the name *L. intermedia* having been previously employed, I have named it in honour of the celebrated Italian Hymenopterist, by whom it was first described. M. Fonscolombe's description of the species which he named *L. intermedia*, and which is taken from a ♀ specimen, agrees with Mr. Walker's description of *L. dorsigera* ♀; but not with Spinola's *L. intermedia*, as used by Mr. Walker without any expression of doubt; although M. Fonscolombe gives the reference to Spinola with a query, and points out the differences between his own and Spinola's insect.

^d The different colour of the basal joint of the male antennæ, the interrupted anterior yellow margin of the collar in both sexes, the want of the lateral lines at the base of the wings in the female, and the want of the broad fascia on the coxæ of *L. dorsigera*, are especially observable.

From Spinola's observations, the economy of this insect appears to be very different from that of the other species which have been observed. "*Fæminam* inveni in gallâ fungosâ coronatâ mespiliformi *Quercus ramulorum*, in montibus *Oreii*."

Leucospis assimilis. *Westw.* ♀ (nova species.) *Nigra*, abdomine thorace dimidio fere longiore, collare flavo-marginato, margine antico abbreviato, scuto mesothoracico toto nigro, abdomine utrinque macula minuta flava inter fascias 1 et 2, tibiis intermediis flavis. (Long. corp. $3\frac{3}{4}$ —4 lin.; expans. alar. $6\frac{3}{4}$ — $7\frac{1}{4}$ lin.)

Leuc. dorsigeræ affinis. Corpus gracile: caput nigrum, immaculatum: antennæ nigrae, articulo 1^{mo}. in medio subtus flavescenti: collare nigrum, bifasciatum, fascia antica abbreviata, postica elongata, et per margines laterales collares paullò producta?: mesothoracis scutum totum immaculatum, ejusdem scutellum apice lineâ transversâ, integrâ, antice ferè rectâ: metathoracis præscutum obtusè bidentatum: epimera metathoracica flavo-notata: abdomen thorace dimidio ferè longius, subcompressum, ad secundum segmentum angustius, flavo 3-fasciatum (fasciis in medio supra interruptis) 1^{ma}. utrinque abbreviata, inter fascias 1 et 2 utrinque macula minuta flava; fasciis 2 et 3 longitudine æqualibus: oviductus ad basin abdominis productus: coxæ 4 anticae nigrae, femora 4 antica nigra apice pallida tibiæ anticae flavescentes extus nigrescentes, tibiæ intermediæ flavæ: coxæ posticae nigrae, apice subtus macula minuta flava notatae; femora postica interne nigra, externe nigra, basi subtus margineque apicali supra flavis; dentibus 12-armata, 1^{mo}. maximo, e dentibus reliquis in femore uno dentes 3 et 4, in altero dentes 5 et 6 sunt majores; tibiæ posticae flavæ, intus nigrae; tarsi omnes flavidi: alæ subfuscae, costa saturatiori.

Var. ♀.—Articulo 1^{mo}. antennarum subtus flavido vix notato, collaris lateribus totis flavo tenuè marginatis, coloreque flavo femorum posticorum minus extenso, femoribus dentibus 16-armatis (dentes 2 et 4 in uno femore fere oblitterati), 1^{mo}. maximo, 6, 7 et 8 reliquis majoribus: cæteris cum præcedenti ad punctum convenit.

Habitat in Europa—Germania? In Mus. Hope.

The remarkable difference in the denticulation of the posterior femora, in this species, is worthy of observation.

I think it not improbable, that the insect described by Mr. Walker as a doubtful variety of the male of *L. dorsigera* (*Ent. Mag.* Vol. II. p. 20) is the male of the above described species, regard being had to the circumstance, that in the species allied to *L. dorsigera* the females are distinguished by a greater share of yellow colour than the opposite sex.

Leucospis Sicelis. Westw. ♀ (nova species.) *Abdomine thorace dimidio longiori, collari flavo lineâ tenui centrali transversa nigra, tibiis 4 anticis totis flavis, coxis posticis apice subtus flavo-notatis, femoribusque posticis 15-dentatis.* (Long. corp. $4\frac{3}{4}$ lin.; expans. alar. 8. lin.)

Corpus satis crassum, *L. intermediæ* (Spinola), et *dorsigeræ* affinis, e quibus colore pedum, &c. magnitudineque majori crassiori differt: caput latum, versus os vix attenuatum, nigrum, immaculatum: antennæ nigræ, articulo 1^{mo}. flavo: collare flavum, fascia transversa centrali tenui nigra; mesothoracis scutum in medio immaculatum, ad latera lineolis 2 flavis obliquis prope alarum basin; mesothoracis scutellum apice linea transversa integra flava; metathoracis præscutum fere inerme; epimera metathoracica flavo notata: abdomen thorace dimidio fere longius, flavo latè 3-fasciatum, fasciis in medio interruptis, fasciis 1 et 2 latitudine æqualibus, illa ad latera abbreviata, hac late fere ad originem oviductus lateraliter producta, inter 1 et 2 utrinque macula lateralis minuta elongata (quasi rudimentum fasciæ 2^{dæ}. oblitteratæ), fascia apicalis magnitudine mediocri: oviductus ad basin abdominis productus: pedes flavi, coxis anticis femorumque anticorum et intermediorum basi nigris: coxæ intermediæ nigræ, macula minuta flava: tibiæ 4 anticæ totæ flavæ immaculatæ: coxæ posticæ nigræ, apice subtus macula parva flava; femora postica internè nigra, apice fulva; externè flava, macula elongata infera apicali nigra; dentes 15 nigri, 1^{us}. magnus, cæteri parvi; tibiæ posticæ latere interno nigræ: alæ fulvescentes, costa saturatiori.

Habitat in Sicilia. In Mus. nostr. a celeberr. Haworth, preceptore nostro Entomologo, heu valde deflendo! communicata.

Note.—*L. petiolata* and *atra* (Fab.) appear to belong to a subgenus distinct from the preceding.